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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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IM22/0913

EXAMINER
VARCOE JR, F

ART UNIT	PAPER NUMBER
1764	7

DATE MAILED: 09/13/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/287,602

Applicant(s)

Kim

Examiner

Varcoe

Art Unit

1764



-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jun 25, 2001
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

Art Unit: 1764

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not explain the manner of delivery of conditioned gas that causes the gas delivered from the combustion chamber to avoid directly contacting a substantial portion of the cooler gas. This topic seems to be addressed on page 12 of the specification, lines 1-4. The specification states that air or nitrogen is supplied to the plate material (61a) of the guide plate 61. It is not clear what this means. What does it mean to supply gas to a material? And how does supplying gas to a material prevent a high temperature gas from contacting a low temperature gas? One could imagine that the conditioned gas is delivered to the plate in a manner that creates a layer of conditioned gas on top of the plate that then prevents the downwardly flowing hot gas from actually touching the cooler plate, thereby avoiding cooling the gas on the plate and avoiding generating powder that would result from the cooling. But neither the specification nor the claim states or implies this. It remains unclear where the hot and cold gas mixing might occur and how the gas from nozzle 62 prevents this mixing.

Art Unit: 1764

Another source of confusion is the nature of the contact between the gas from the combustion chamber and the cooler gas. Claim 6 recites that "... the gas delivered from the combustion chamber does not directly contact a substantial portion of the cooler gas..." That raises the question of what actually does happen. Does this imply "indirect contact?" If so, it is not clear what is meant. One form of indirect contact is contact via a heat transfer surface with one gas on one side and another gas on the other. There is no direct contact, but the heat moves from one as to the other through the surface. But that does not seem to be what is meant here. Another possibility is that the contact is direct, but the contact is with an in substantial portion of the cooler gas. If so, that should be stated.

Applicant explains in the amendment filed June 25, 2001, that the Specification clearly states that the mixing of the hot gas with the cooler gas takes place at the interface between the combustion chamber and the wetting chamber. Applicant states that introduction of gas from nozzle 62 does not prevent the hot and cold gases from mixing, but rather prevents the hot and cold gases from coming in direct contact with each other. It is not clear how mixing takes place when there is no direct contact between the gases.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1764

3. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 2, claim 1 defines “the gas” is defined as gas directed from the combustion chamber into the wetting chamber (line 5). But claim 2 recites “adapted to burn flammable elements of the gas.” If “the gas” is the gas that has already left the combustion chamber presumably never to return, it is not clear how the combustion chamber can then burn flammable components of that gas.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

Art Unit: 1764

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-3, 5-8, 14, 15 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartung et al., U.S. Patent No. 5,900,217.

The rejections of claims 1-3, 5-8, 14, 15 and 18-21 have been made in the previous office action, Paper No. 5, dated March 22, 2001.

7. Claims 4, 9-13, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartung et al., U.S. Patent No. 5,900,217 in view of Kim, Korean Patent Publication 97-9311 published June 10, 1997, English translation supplied..

The rejections of claims 4, 9-13, 16 and 17 have been made in the previous office action, Paper No. 5, dated March 22, 2001.

Response to Arguments

8. Applicant's arguments filed June 25, 2001, have been fully considered but they are not persuasive. The response to Applicant's argument about the 35 U.S.C. 112, first paragraph, rejection of claim 6 has been presented above.

The 35 U.S.C. 112, second paragraph, rejection of claim 7 has been withdrawn.

Examiner does not understand applicant's response to the 35 U.S.C. 112, second paragraph, rejection to claim 2.

Art Unit: 1764

The 35 U.S.C. 112, second paragraph, rejection of claim 6 has been withdrawn.

With regard to the section 103(a) rejections, Applicant argues that capability of operation of the means for minimizing powder production during operation of the scrubber distinguishes the apparatus of the present invention from that of Hartung. Examiner agrees that operating Hartung's nozzle ring during operation of Hartung's apparatus might not work well for powder reduction, especially as compared to the performance of the present invention. But Applicant's claims are not process claims. The claim requirement of claim 1 is "... having an opening adapted to deliver a conditioned gas above the guide plate during operation of the gas scrubber...." Hartung's apparatus also has that opening. How well it works, or the intention of the designer are not features that patentably distinguish apparatus from the prior art. Applicant argues that since Hartung does not teach operating his ring nozzle during system operation, there is a failure to establish obviousness due to lack of motivation found in the reference. Examiner argues that since the ring nozzle is in the primary reference, no motivation is necessary for relying on that feature in an obviousness rejection. In addition, Applicant argues that operating Hartung's ring nozzle during operation could render Hartung's apparatus inoperable. While that may be the case, that does mean that Hartung's apparatus fails to disclose an injection nozzle having an opening to deliver a conditioned gas above the guide plate during operation.

Applicant argues that Hartung's nozzle is not adapted to clean the interface is not persuasive because cleaning is not claimed in claim 1 of the present invention. All that is claimed for the nozzle is being adapted to deliver a conditioned gas above the guide plate.

Art Unit: 1764

Applicant argues that “adapted to deliver a conditioned gas” is a structural limitation. Examiner is convinced by that argument. However, adding “during operation of the gas scrubber” is more of a timing consideration than a structural consideration. Therefore “during operation of the gas scrubber” is not considered to structurally limit the apparatus, lacking some physical restriction in the prior art cited preventing such operation.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Varcoe, whose telephone number is (703) 306-5477. The examiner can normally be reached Monday through Friday from 9:00 am to 5:00 pm.

Art Unit: 1764

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode, can be reached on (703) 308-4311.

The FAX telephone number for this Group Art Unit is (703) 305-3599 (for Official papers after Final), (703) 305-5408 (for other Official papers) and (703) 305-6357 (for Unofficial papers).

When filing a FAX in Group 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of the application. This will expedite processing your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

RV
September 10, 2001

Hien Tran

**HIEN TRAN
PRIMARY EXAMINER**